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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/028,768

12/28/2001

Gee Sung Chae

2658-0281P

4297

2292

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12/23/2003

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EXAMINER

RICHARDS, N DREW

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,768

Applicant(s)

CHAE, GEE SUNG

Examiner

N. Drew Richards

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-8 in Paper No. 3 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 4A and 4B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admitted prior art figure 4B.

Applicant's admitted prior art figure 4B discloses a liquid crystal display device comprising:

a substrate 1;
a gate electrode 3 over the substrate;
a first semiconductor layer 15 over the substrate; and
a source electrode 6a,6b (right portion) and a drain electrode 6a,6b (left portion) over the first semiconductor layer 15, the source and drain electrodes having a first metal layer 6a and a second metal layer 6b formed in a same pattern and defining a separation between the source electrode 6a,6b (right portion) and drain electrode 6a,6b (left portion).

With regard to claim 3, the first metal layer includes molybdenum or titanium.

With regard to claim 4, the second metal layer includes aluminum or copper.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art figure 2, in view of Ueda et al. (U.S. Patent No. 6,078,365).

With regard to claim 1, Applicant's admitted prior art figure 2 teaches a liquid crystal display device comprising:

a substrate 1;

a gate electrode 3 over the substrate;

a first semiconductor layer 15 over the substrate; and

a source electrode 5 and a drain electrode 7 over the first semiconductor layer 15, the source and drain electrodes having a first metal layer and being formed in a pattern that defines a separation between the source electrode and drain electrode.

Applicant's admitted prior art figure 2 does not teach the source and drain electrodes having a first metal layer and a second metal layer formed in a same pattern as the first metal layer and defining a separation between the source and drain electrodes.

Ueda et al. teach a liquid crystal display device in figure 15f, for example. Ueda et al. teach source and drain electrodes 79 formed above a semiconductor layer 77, the source and drain electrodes having a first metal layer and a second metal layer, the first and second metal layer having the same pattern and defining a separation between the source electrode and drain electrode. Ueda teach the source and drain electrodes 79 having a first and second metal layer on column 17 lines 22-30 where layer 79 is a three-layered structure.

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Applicants admitted prior art figure 2 and Ueda et al. are combinable because they are from the same field of endeavor. At the time of the invention, it would have been obvious to one of ordinary skill in the art to form the source and drain electrodes from the three-layered structure of Ueda et al. (which includes the first and second metal layers as claimed). The motivation for doing so is to include aluminum in the electrodes to lower their resistance for improved conductivity of the circuit components. Therefore, it would have been obvious to combine Applicant's admitted prior art figure 2 with Ueda et al. to obtain the invention of claim 1.

With regard to claim 2, Applicant's admitted prior art further teaches a gate insulating film 9 over the gate electrode and between the substrate and the first semiconductor layer; a second semiconductor layer 17 between the first metal layer and the first semiconductor layer, the second semiconductor layer defining a portion of the separation region in the same pattern as the first metal layer, a protective layer 21 over the source and drain electrodes, and a pixel electrode 23 provided over the protective layer. In combination with Ueda et al., the second semiconductor layer is also in the same pattern as the second metal layer as Ueda et al. teach the first and second metal layers having the same pattern.

With regard to claim 3, the first metal layer of Applicant's admitted prior art is molybdenum.

With regard to claim 4, the second metal layer of Ueda et al. is aluminum.

With regard to claim 5, Applicant's admitted prior art figure 2 teaches a liquid crystal display device comprising:

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a substrate 1;
a gate electrode 3 over the substrate;
a first semiconductor layer 15 over the substrate;
a source electrode 5 and a drain electrode 7 over the first semiconductor layer 15, the source and drain electrodes having a first metal layer and being formed in a pattern that defines a separation between the source electrode and drain electrode, and
a second semiconductor layer 17 beneath the first metal layer and having the same pattern as the first metal layer.

Applicant's admitted prior art figure 2 does not teach the source and drain electrodes having a first metal layer and a second metal layer formed in a same pattern as the first metal layer and defining a separation between the source and drain electrodes.

Ueda et al. teach a liquid crystal display device in figure 15f, for example. Ueda et al. teach source and drain electrodes 79 formed above a semiconductor layer 77, the source and drain electrodes having a first metal layer and a second metal layer, the first and second metal layer having the same pattern and defining a separation between the source electrode and drain electrode. Ueda teach the source and drain electrodes 79 having a first and second metal layer on column 17 lines 22-30 where layer 79 is a three-layered structure.

Applicants admitted prior art figure 2 and Ueda et al. are combinable because they are from the same field of endeavor. At the time of the invention, it would have been obvious to one of ordinary skill in the art to form the source and drain electrodes

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from the three-layered structure of Ueda et al. (which includes the first and second metal layers as claimed). The motivation for doing so is to include aluminum in the electrodes to lower their resistance for improved conductivity of the circuit components. Therefore, it would have been obvious to combine Applicant's admitted prior art figure 2 with Ueda et al. to obtain the invention of claim 5.

With regard to claim 6, Applicant's admitted prior art figure 2 further teaches a gate insulating film 9 over the gate electrode, a protective layer 21 over the source and drain electrodes, and a pixel electrode 23 provided over the protective layer

With regard to claim 7, the first metal layer of Applicant's admitted prior art figure 2 is molybdenum.

With regard to claim 8, the second metal layer of Ueda et al. is aluminum.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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9. Claims 1-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/028305. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-7 of the 10/028305 application anticipate claims 1-8 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

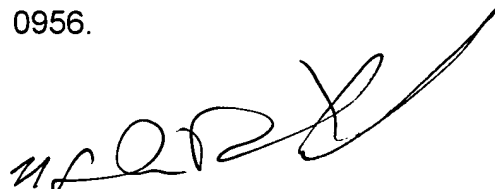
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kim et al. (US 2003/0085404 A1), Baek et al. (U.S. Patent No. 6493048 B1).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (703) 306-5946. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off. Starting February 9, 2004 the examiner can be reached at (571) 272-1736.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


NDR


TOM THOMAS
SUPERVISORY PATENT EXAMINER